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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,635	08/22/2005	Hiroshi Shima	Q85366	3529
23373 7590 03/07/2007 SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			EXAMINER DUNLAP, JONATHAN M	
			ART UNIT 2855	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		03/07/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/518,635

Applicant(s)

SHIMA ET AL.

Examiner

Jonathan Dunlap

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,7,8,13 and 17 is/are rejected.
- 7) ☒ Claim(s) 3-6,9-16,18 and 19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☒ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date December 20, 2004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

Acknowledgement is made of the amendment submitted December 20, 2004. The corrections to the specification, claims and drawings have been placed on record. Claims 7-10, 17 and 19 have been amended. Claims 1-19 are pending in this application. An Office Action on the merits is to follow.

#### *Priority*

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

#### *Claim Objections*

**Claim 7** is objected to because the language "An for measuring" does not point out whether the claim is directed towards a method or an apparatus. Perhaps Applicant meant "An apparatus for measuring," which would be consistent with the format of the succeeding claims. Appropriate correction is required.

**Claim 13** is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. **Claim 13** is an apparatus claim that is improperly dependant upon a method claim.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

**Claim 13** recites the limitation "the one rectangular sheet-shaped magnet" in the second line of the claim. There is insufficient antecedent basis for this limitation in the claim. **Claim 1** does not disclose the use of a magnet of any kind.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

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1. **Claim 1** is rejected under 35 U.S.C. 102(e) as being anticipated by **Meins (U.S. Patent 6,612,164)**.

Meins discloses a method for measuring at least one of forces in a peripheral direction and a radial direction of a running tire **3** mounted onto a rim **2** acted upon a ground contact face **13**, in which when a point on an outer peripheral face of the rim is **Q 9** and an intersect between a straight line passing through the point **Q 9** under no action of external force and extending in the radial direction and an inner peripheral face of a tread portion of the tire is **P 11**, said forces are determined from a variant pattern that a relative displacement of the point **P 11** to the point **Q 9** in the peripheral direction or the radial direction is changed in accordance with a rotating position of the point **Q 9** when the point **P 11** passes through the ground contact portion **13** of the tire **3** (**Figure 1; Column 1, lines 55-67; Column 2, lines 1-16, lines 34-43; Column 5, lines 8-36**).

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 2, 7 and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Meins (U.S. Patent 6,612,164)** in view of **Mancuso et al. (PG-PUB 2003/0159503 A1)**.

Considering **claim 2**, Meins discloses all of the claimed limitations from above but fails to disclose the use of a magnet and a magnetic sensor as claimed.

4. However, Mancuso teaches:

Considering **claim 2**, that wherein:

- A magnetic field formed by a magnet **110** arranged on one of the point P and the point Q is continuously measured by a magnetic sensor **111** arranged on the other of the point P and the point Q (**Figure 8; [0054]; [0011]; [0037]; [0040-41]; [0061]**); and
- The variant pattern of the relative displacement between the point P and the point Q is determined by reverse calculation from a variant pattern of a magnetic flux density changed in accordance with the relative displacement (**Figure 9; [0042-43]; [0049-55]**).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate a magnet and a magnetic sensor arranged on either a rim or an inner periphery of a tire and use a reverse calculation of a magnetic flux density to calculate a relative displacement as taught by Mancuso in the invention by Meins. The motivation for doing so is found in the disclosure of Meins, in that Meins discloses "the measurement is particularly simple when the measuring point is designated as an active, e.g. radiating, transducer...for example, an optical or acoustic magnetic or electromagnetic radiation or fields" (**Column 3, lines 33-36**).

Considering **claim 7**, Meins discloses a sensor attached directly or indirectly through a fitting jig to an outer peripheral face of a rim (**Not Shown in Figure, Figure 9 is closest; Column 39-46**) but fails to disclose a magnet on the inner peripheral face of a tread portion and that the sensor is magnetic.

5. However, Mancuso teaches a magnet **110** arranged on an inner peripheral face of a tread portion, and a magnetic sensor **111** (**Figure 8; [0054]**).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to position a magnetic sensor attached directly or indirectly through a fitting jig to an outer peripheral face of a rim as taught by Mancuso in the invention by Meins. The motivation for doing so is found in the teachings of Meins, in that by attaching a sensor to a valve through the rim of the wheel, "the valve can be equipped with a pressure measuring device that is independent of the sensor" (**Column 6, lines 39-46**).

Considering **claim 13**, Meins fails to disclose a rectangular magnet arranged with a center on the inner peripheral face of a tread and side directed to a peripheral direction.

6. However, Mancuso teaches a rectangular sheet-shaped magnet **210** arranged so as to position a magnet center to the point P and direct a side of the magnet **210** to a peripheral direction (**Figure 10; [0056-60]**).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate a rectangular magnet as taught by Mancuso

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in the invention by Meins. The motivation for doing so is an extension of the previous motivation for including a magnet as stated with regards to claim 2, in that Mancuso teaches, "the generators undergo deformation beyond the corresponding meridian plane, and the sensors register the shear deformation in the longitudinal direction of the tread" ([0059])

7. **Claims 8 and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Meins (U.S. Patent 6,612,164)** in view of **Mancuso et al. (PG-PUB 2003/0159503 A1)** and further in view of **Fennel et al. (PG-PUB 2004/0244474 A1)**.

The invention by Meins, as modified by Mancuso, discloses all of the claimed limitations from above but fails to disclose a magnet attached through a fitting jig and a sensor on an inner peripheral face of a tread portion and that the sensor or magnet may be fitted outward of the periphery of the rim in the radial direction.

8. However, Fennel teaches

Considering **claim 8**, a magnet **13'** (**energy supply unit**) attached directly, or indirectly, through a fitting jig to an outer peripheral face of a rim **1** and a magnetic sensor **15** arranged on an inner peripheral face of a tread portion (**Figure 3; [0022]; [0027]**).

Considering **claim 17**, the magnet **13'** or the magnetic sensor is indirectly attached to an outer peripheral face of a rim **1** through a fitting jig and at a position separated outward from the outer peripheral face of the rim **1** in a radial direction of the tire (**Figure 3**).



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Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to position a magnetic attached directly or indirectly through a fitting jig to an outer peripheral face of a rim and a sensor on an inner peripheral face of a tread portion as taught by Fennel in the invention by Meins, as modified by Mancuso. The motivation for doing so is found in the teachings of Fennel, "the arrangement makes use of the advantage that, upon rotation of wheel jointly with assemblies, the assemblies maintain an invariable position relative to the inside tire surface so that a signal transmission for the energy and/or data transmission by way of the described field coupling can be executed in a particularly simple manner" ([0027])

### ***Allowable Subject Matter***

9. **Claims 3-6, 9-12, 14-16 and 18-19** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Melton et al., Brown et al., Burreson, Matsubara et al, Kosaka et al., Becherer, Brown, Hessmert et al., Poulbot, Kikuchi et al., Takusagawa et al., Becherer et al., Drahne et al., Cetlin et al., Ratti et al., Goslar et al., Wilson, Mancuso et al., Tsipov, Tsuchie et al., and Albazzati et al. Any inquiry concerning this communication or earlier communications from the examiner should be directed to

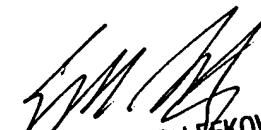
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Jonathan Dunlap whose telephone number is (571) 270-1335. The examiner can normally be reached on M-F 8-5 with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jonathan Dunlap  
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February 27, 2007



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